What is claimed is:

1. A method for isolating a single polymer molecule comprising:

chemically modifying at least one terminus of a single polymer molecule to form a modified polymer molecule;

coating a microarea on the surface of a solid support with

an amount of a specific binding molecule that binds the modified polymer molecule and,

an amount of a functional non-binding molecule that does not bind with the modified polymer molecule such that the average distance between effective binding sites is two times the polymer's length to form a coated solid support; and

contacting the modified polymer molecule with the coated solid support.

2. The method of claim 1 wherein the polymer molecule is a nucleic acid.

3 The method of claim 2 wherein at least one terminus of the polymer molecule is chemically modified to comprise a thiol, carboxy, or amino group.

4. The method of claim 2 wherein at least one terminus of the polymer molecule is chemically modified with a molecule selected from the group consisting of biotin, digoxigenin, fluorescein, and combinations thereof.

5. The method of claim 2 wherein the specific binding agent comprises gold and the functional non-binding agent comprises silver, copper, magnesium, silicon, gallium or a combination thereof.

6. The method of claim 2 wherein the specific binding agent is avidin or streptavidin and the functional non-binding molecule is a protein.

7. The method of claim 6 wherein the protein is bovine serum albumin.

8. The method of claim 1 wherein the microarea is from about 400 nm^2 to about 100 mm^2.

9. The method of claim 1 wherein the average distance between polymer molecules is 1 micron to about 70 mm.

10. The method of claim 1 wherein the solid support is selected from the group of a plate, a slide, a film, a strip, a rod, a tube, and combinations thereof.

11. The method of claim 1 wherein said tube is an optical fiber.

12. The method of claim 1 wherein the surface of the support is precoated with a protecting group.

13. The method of claim 1 further comprising detecting the presence of a single polymer molecule attached to the support.

14. The method of claim 13 further comprising marking the position of a single polymer on the support.

15. A device for isolating or transporting a single polymer molecule comprising:

a solid support comprising a micro area which is coated with an amount of a specific binding molecule admixed with a functional non-binding molecule such that an average distance between effective binding sites is two times a length of the single polymer molecule.

16. A device according to claim 15 further comprising an immobilized polymer molecule.

17. A device according to claim 16 wherein the polymer is a nucleic acid.

18. A device according to claim 15 further comprising a mark of the location of the polymer molecule on the support.

19. The device of claim 15 wherein the specific binding molecule is gold and the functional non-binding molecule is copper, silicon, gallium, or combination thereof.

20. The device of claim 15 wherein the specific binding molecule is avidin or streptavidin and the functional non-binding molecule is bovine serum albumin.

21. The device of claim 15 wherein the microarea is from about 400 nm^2 to about 100 mm^2.

22. The device of claim 15 wherein an average distance between polymer molecules is 0.1 microns to about 70 mm.

23. The device of claim 15 wherein the solid support is selected from the group of a plate, a slide, a film, a strip, a rod, and a tube.

24. The device of claim 15 wherein said tube is an optical fiber.

25. The device of claim 15 wherein part of the surface of the support is coated with a protecting group.

26. A method for isolating and sequencing a single polymer molecule comprising:

chemically modifying at least one terminus of the polymer molecule to form a modified polymer molecule;

coating a substrate with

an amount of a specific binding agent that binds the modified polymer molecule and,

an amount of a functional non-binding agent that does not bind with the modified polymer molecule such that the average distance between effective binding sites is two times the polymer's length to form a coated solid support;

adhering the substrate to a microchannel;

flowing the modified polymer molecule into the microchannel;.

allowing the modified polymer to adhere to the substrate;

washing the substrate and modified polymer; and

sequencing the modified polymer.

27. The method according to claim 26 wherein the polymer is a nucleic acid.